5.9 Accotink Mainstem 3

The results of the subwatershed ranking analysis showed seven subwatersheds in Mainstem 3 WMA to be in good condition; four of these were due to the influence of undeveloped parcels in Wakefield Park. Three additional subwatersheds have good forest and wetland cover. The remaining 11 subwatersheds were impaired in some form. In terms of overall ranking, Mainstem 3 had 11 of the highest priority subwatersheds for the overall project.

5.9.1 Structural Projects

5.9.1.1 10-Year Projects

AC9161 Stormwater Pond Retrofit

This existing dry pond (0294DP) near the intersection of Americana Drive and Commons Drive in the Patriot Village neighborhood is recommended to be retrofitted by modifying the outlet structure to provide storage, creating a micropool at the outlet, installing sediment forebays at inlets, excavating the pond outlet to provide better storage and stabilizing the existing stream channel.

AC9162 Stormwater Pond Retrofit

This project is a retrofit of an existing dry pond (0293DP) at Patriot Drive and American Drive in the Patriot Village neighborhood. Recommendations include adding forebays at all inlets, modifying the outlet to provide storage and excavating the pond to provide additional storage. The receiving stream on the downstream side of the culvert will also be stabilized to prevent further erosion.

AC9210 Stream Restoration

This project involves restoring three stream channels located within Wakefield Park draining commercial areas located along Braddock Road and the Capital Beltway. These channels are currently incised and over-widened with moderate to severe erosion occurring on meander bends and along straight sections. Restoration of these channels will focus on reducing the channel dimensions and raising the stream bed elevations to reconnect each channel to the floodplain.

Truro Neighborhood Stream Restoration Projects -- Three stream restoration projects through the Truro neighborhood have been proposed to restore a substantial length of Turkey Run, a tributary to Mainstem 3. Ideally, they would be implemented from upstream to downstream, in the following order: AC9213, AC9212 and AC9211.

AC9211 Stream Restoration

This project is located between Kenwyn Court and Wakefield Drive and involves the restoration of a short section of existing stream channel that starts at a large storm drain outfall and extends southwest to the mainstem of Turkey Run. Currently, this channel is incised with moderate erosion on both banks. Regrading and stabilizing are recommended. Stone toe protection may be needed near the storm drain outfall and under the foot bridge to prevent future erosion. Raising the bed elevation of this channel and installing grade controls will prevent further incision.

AC9212 Stream Restoration

This project involves a stream channel located between Elizabeth Lane, Aunt Lilly Lane, Kenwen Court and Ossian Hall Lane. This sinuous channel is currently incised, and over-widened. It has eroded primarily on outside meander bends and along some straight sections. The severity of erosion and incision increases downstream. Reconnecting the stream to the floodplain and grade controls are recommended.

AC9213 Stream Restoration

This project is located between Ann Fitzhugh Drive, Aunt Lilly Lane, Turkey Creek Court and Mary Lee Lane. Currently, there is an exposed sanitary sewer concrete casing acting as grade control for an active headcut in the stream channel near the end of Mary Lee Lane. on either side of the sewer utility the stream channel is beginning to over-widen. Reducing the existing channel dimensions, raising the bed elevation of the channel, and correcting the slope of the channel at the sewer casing will all help to reconnect flows to the floodplain.

AC9214 Stream Restoration

This is a stream restoration project for an eroded and incised channel behind Woodlark Drive in Wakefield Park. Recommendations include regrading and stabilizing eroded stream banks, raising the current bed elevation and installing stone toe protection and armoring techniques where sanitary sewer lines are exposed in the stream channel.

AC9215 Stream Restoration

This project is a stream restoration in Mill Creek Park just upstream of the road culvert under Little River Turnpike that receives stormwater runoff from the Turnpike and the Calvary Church of the Nazarene. The stream channel is incised and over-widened with moderate to severe erosion occurring on the outside of meanders. Recommendations include regrading and stabilizing eroded stream banks, altering the current stream alignment and installing stone toe protection.

AC9216 Stream Restoration

This is a stream restoration project for two channels behind Americana Drive in the Lafayette Forest neighborhood. Both channels are currently incised and over-widened and eroding on meander bends and straight sections. Recommendations include reducing the stream channel dimensions, raising the bed elevation to reconnect each channel to the floodplain and installing grade controls to prevent future incision and over-widening of the channel.

AC9217 Stream Restoration

This is a stream restoration project behind Donnybrook Court. Field assessment indicated an absence of riparian buffer and moderate erosion along the stream banks. Restoration will focus on reconnecting higher flows to the original floodplain to dissipate energy and encourage deposition of sediment on the floodplain. Other restoration components include reducing the existing channel dimensions, installing grade controls in the stream channel restoring areas of deficient riparian buffers.

AC9218 Stream Restoration

The stream channel between Hummer Road and Pleasant Ridge Road in the Pleasant Ridge neighborhood is incised with areas of active erosion and presents an opportunity for stream restoration. Recommendations include constructing nested benches throughout the reach and restore riparian buffer where applicable.

AC9230 Stream Restoration

This project entails restoring the existing stream channel located in Wakefield Park between I-495 and Queen Elizabeth Boulevard that is deeply incised and experiencing severe bank and bed erosion. Restoring the channel will include regrading and stabilizing eroded stream banks with armor-in-place and bioengineering techniques and installing grade controls to dissipate energy.

AC9231 Stream Restoration

This project entails restoring overflow stream channels located within the eastern floodplain of Accotink Creek between I-495 and Toll House Road in Wakefield Park. Currently, these channels are deeply incised with bank and bed erosion. Restoration would include repairing bank erosion with armor-in-place and bioengineering techniques and installing grade controls.

AC9232 Stream Restoration

This project entails restoring the existing stream channel located within Wakefield Park that is located between I-495 and Toll House Road which extends from the culvert under I-495 downstream to the confluence with Accotink Creek. Currently, this channel is experiencing severe bank and bed erosion and is deeply incised. This restoration would regrade and stabilize the eroded banks and install grade controls to dissipate energy.

AC9233 Stream Restoration

This project entails restoring an existing stream channel that is experiencing severe bank and bed erosion and is deeply incised located within Wakefield Park between I-495 and Briar Creek Drive. The channel extends from the downstream side of the culvert under I-495 downstream to the confluence with Accotink Creek. Restoration would include regrading and stabilizing eroded stream banks and installing grade controls.

AC9304 Area-Wide Drainage Improvements

There are no existing stormwater management facilities in the subwatershed. Area-wide drainage improvements are recommended to treat the runoff from the medium-density Ravensworth Park and Bristow residential areas through the installation of tree box filters, swales and bioretention filters.

AC9311 Area-Wide Drainage Improvements

Area-wide drainage improvements are recommended to treat the runoff from the untreated medium-density areas of the Ramblewood subdivision are recommended here. Projects include installing tree box filters, disconnecting downspouts and installing rain gardens.

AC9535 New BMP/LID

This site, in Wakefield Chapel Estates, experiences concentrated flows across a yard to an outlet. Recommendations include adding a vegetated swale and check dams. Outreach and education is proposed for this neighborhood as part of project AC9935.

AC9538 New BMP/LID

Project recommendations include converting three existing dry ponds in the parking lot at Northern Virginia Community College dry ponds to bioretention cells or extended detention through modifying outlets and excavating the ponds to increase storage. The bottom of the existing ponds would be excavated and the outlets modified to provide additional water quality treatment.

AC9539 New BMP/LID

This project is a potential parking lot retrofit at Annandale Terrace Elementary School. Currently, there are no stormwater management facilities on this site. Recommendations include adding bioretention facilities in the parking lot medians to provide water quality control and installing tree box filters at the existing storm drain inlets.

AC9541 New BMP/LID

This is a potential parking lot retrofit at Little River Shopping Center on Little River Turnpike. Recommendations include the addition of bioretention cells in parking lot islands along Little River Turnpike to provide water quality control.

5.9.1.2 25-Year Projects

AC9159 New Stormwater Pond

There is an existing grass swale receiving runoff from the Townes of Wakefield development along Braddock Road at the south end of Howery Field Park. The project proposes converting the swale to a stormwater pond by using a berm and creating wetlands to provide water quality treatment.

AC9160 Stormwater Pond Retrofit

This project is a retrofit of wet pond WP0195 which treats stormwater runoff from the medium-density residential area of Chapel Lake, along Chapel Lake Court. Recommendations include removing trees from the embankment, modifying the riser to provide storage, excavating the pond bottom for storage and create an aquatic bench around the pond perimeter. There are wetland elements around pond edge but the existing pond banks are beginning to erode. There are no modifications necessary for the existing inlets.

AC9165 Stormwater Pond Retrofit

This is a potential retrofit of dry pond 0102DP behind Whitman Road in Camelot Greens to be converted to a shallow wetland facility. This project will install a new riser structure in place of the existing headwall, remove trees impacting the facility and excavating for additional storage.

AC9166 Stormwater Pond Retrofit

A retrofit is proposed for the dry pond (0627DP) behind Donnybrook Court in the Lafayette Forest neighborhood. Proposed project recommendations include adding a forebay, lengthening the channel flow path, excavating for additional volume and modifying the riser to maximize the volume available for wet storage.

AC9167 Stormwater Pond Retrofit

This is a potential retrofit of dry pond 0128DP that treats multifamily residential homes in the Lafayette Park West neighborhood. The project recommendations include excavating the pond bottom for additional volume storage, replanting vegetation on side slopes and bottom, adding a forebay and lengthening the flow path.

AC9168 Stormwater Pond Retrofit

This project is a retrofit of dry pond 0178DP that treats stormwater runoff from high and medium-density residential areas in the Adams Walk neighborhood. Recommendations include modifying the riser, excavation and installing micropools or plunge pools at inlets for increased settlement of sediment and energy dissipation.

AC9169 Stormwater Pond Retrofit

This project is a retrofit of a long narrow dry pond (DP0373) located in the parking lot at the Wachovia building between Hummer Road and Woodland Road. The project includes converting the pond to a bioretention facility to provide water quality treatment.

AC9170 Stormwater Pond Retrofit

This proposed project is to retrofit existing dry pond 0314DP to an extended detention facility to treat a part of the Lafayette Village neighborhood. Field assessment indicated badly eroded inlet channels and an eroded downstream channel. Recommendations include modifying the riser, adding a forebay at the inlet and a micropool at the outlet.

AC9407 Culvert Retrofit

A retrofit is proposed at the upstream end of the road culvert under Private Lane. The area is flat and would provide some storage as well as water quality benefits through a micropool and plantings.

AC9534 New BMP/LID

This site is a former school converted into the Annandale District Government Center. A bioretention facility is proposed to treat the runoff from the parking lots.

AC9536 New BMP/LID

This project identifies potential areas for a downspout disconnection and installation of bioretention facilities at Wakefield Forest Elementary School. Rain gardens may also be possible here.

AC9537 New BMP/LID

This project proposes to convert an existing swale in Wakefield Chapel Park to a step-pool bioretention facility to provide additional water quality control. The swale now drains single-family residential homes in the Wakefield Chapel Estates neighborhood.

AC9700 Outfall Improvement

This project will reconstruct the storm drain outfall in Wakefield Park to a step pool wetland to provide additional water quality control through removal of an existing concrete channel and excavation of the area. The channel now drains single-family residential homes on Mockingbird Drive and a part of Duncan Drive.

AC9701 Outfall Improvement

This proposed project is located at the upstream edge of Wakefield Park where drainage from a single-family residential area in the Chestnut Hill neighborhood flows into the park. Project recommendations include removing the concrete channel below the outfall and constructing a step pool wetland system to provide additional water quality control.

5.9.2 Non Structural Projects

AC9900 Community Outreach/Public Education - Stenciling

This community-wide project involves marking the storm drains within the Ravensworth Grove, Ravensworth Park, Bristow, Cedar Crest, Heritage Hill, Wakefield Chapel Estates, Chestnut Hill, Fairfax Hill, Tollhouse Woods and Monroe Knolls communities. The stencil marking can educate the public, reduce dumping and reduce the amount of litter and pollutants that enter the storm drain system.

AC9903 Inspection/Enforcement Enhancement Project - Outdoor Materials

Materials that are stored outdoors are subjected to precipitation, making them a possible source of stormwater runoff pollution. One site in this WMA had improper storage of materials. This project would be a community-wide enforcement and outreach approach to check for stormwater pollution prevention plans and to educate property owners.

AC9904 Rain Barrel Programs - Rain Barrels

Rain barrels provide the first step for residents to disconnect their downspout. This project would be a community-wide outreach program to encourage their use. Several neighborhoods were identified during the upland reconnaissance with roof drainage that would be suitable for this approach. These included Ravensworth Grove, Ravensworth Park, Bristow, Cedar Crest, Heritage Hill, Wakefield Chapel Estates, Chestnut Hill, Fairfax Hill, Tollhouse Woods and Monroe Knolls Truro, Wakefield Chapel Woods, and Wakefield Forest, Woods of Ilda, and Oak Hill.

AC9906 Inspection/Enforcement Enhancement Project - Litter/Trash Enforcement

Litter and trash enforcement is done through the enforcement of regulations for illegal dumping, litter laws, or unsecure truck loads. Community outreach programs for beautifying neighborhoods, including health and safety information, can be used effectively in the implementation of the programs. The areas flagged for enforcement include Parliament Apartments and Fairmont Garden Apartments.

AC9908 Inspection/Enforcement Enhancement Project - Dumpster Maintenance

One source of litter and pollutants in stormwater runoff is poorly maintained dumpsters and other waste management practices. This project is a community-wide enforcement and outreach approach to properties where problems were identified during the upland reconnaissance. Dumpsters in this WMA were flagged as hotspots with grease stains and little to no evidence of appropriate management.

AC9909 Rain Barrel Programs - Downspout Disconnect

The upland reconnaissance identified several sites where downspouts were directly connected to storm drains. A watershed-wide outreach program could be beneficial in reducing runoff volume or peak flows. In this WMA, it includes the area around Willow Woods and Bristow Village.

AC9910 Street Sweeping Program - Street Sweeping

The Truro and Oak Hill neighborhoods were found to have trash, litter, or organic debris in the curb and gutter, flowing to storm drain inlets. This project consists of developing or extending a street sweeping program to remove potential pollutants from the street before they can wash into a storm drain or a stream.

AC9913 Dumpsite/Obstruction Removal - Dumpsite/Obstruction

Eleven sites were identified with significant obstructions or dumpsites during the stream assessment. This project would be a community-wide program to remove trees and debris blocking fish passage, and trees and yard waste within the stream.

AC9935 Community Outreach/Public Education - Tree Planting

Four communities assessed during the upland reconnaissance could be sites for a watershed-wide outreach program to encourage tree planting and urban reforestation. These include Truro, Wakefield Chapel Woods, Park Glen Heights and Oak Hill.

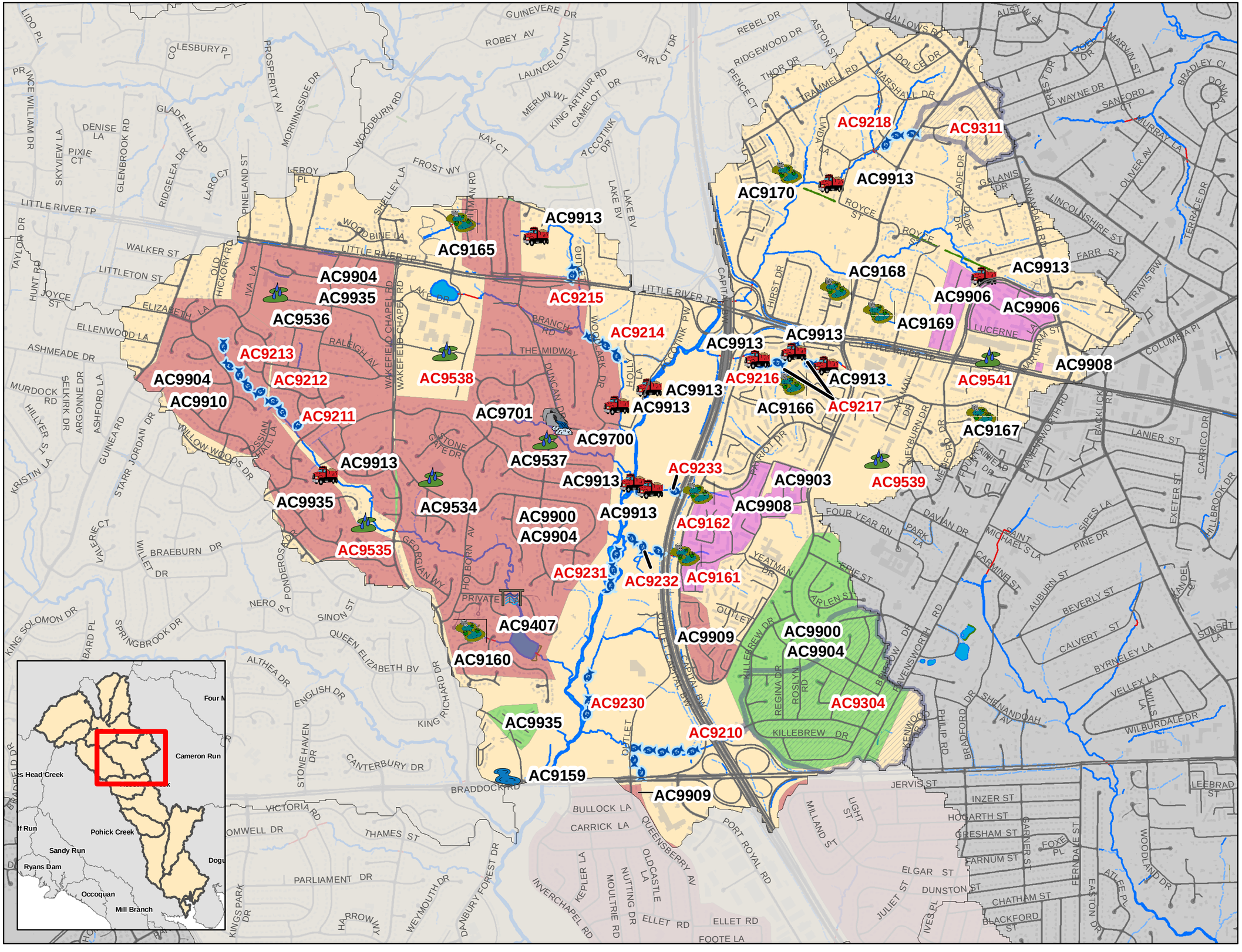
Table 5-9: Mainstem 3 Projects

Structural Projects						
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**	**Phase**
AC9161	Stormwater Pond Retrofit	AC-AC-0295	Patriot Village neighborhood	Water Quality	Private - Residential	1 - 10
AC9162	Stormwater Pond Retrofit	AC-AC-0300	Patriot Village neighborhood	Water Quality and Quantity	Private - Residential	1 - 10
AC9210	Stream Restoration	AC-AC-0280	Wakefield Park neighborhood	Water Quality	County - FCPA	1 - 10
AC9211	Stream Restoration	AC-TR-0010	Truro neighborhood	Water Quality	Private - Residential	1 - 10
AC9212	Stream Restoration	AC-TR-0010	Truro neighborhood	Water Quality	Private - Residential	1 - 10
AC9213	Stream Restoration	AC-TR-0010	Truro neighborhood	Water Quality	Private - Residential	1 - 10
AC9214	Stream Restoration	AC-AC-0320	Wakefield Park	Water Quality	County - FCPA	1 - 10
AC9215	Stream Restoration	AC-AC-0320	Mill Creek Park neighborhood	Water Quality	Private / State - VDOT	1 - 10
AC9216	Stream Restoration	AC-AC-0315	Lafayette Forest neighborhood	Water Quality	Private - Residential	1 - 10
AC9217	Stream Restoration	AC-AC-0315	Lafayette Forest neighborhood	Water Quality	Private - Residential	1 - 10
AC9218	Stream Restoration	AC-CO-0020	Pleasant Ridge neighborhood	Water Quality	Private - Residential	1 - 10
AC9230	Stream Restoration	AC-AC-0280	Wakefield Park	Water Quality	County - FCPA	1 - 10
AC9231	Stream Restoration	AC-AC-0285	Wakefield Park	Water Quality	County - FCPA	1 - 10
AC9232	Stream Restoration	AC-AC-0285	Wakefield Park	Water Quality	County - FCPA	1 - 10
AC9233	Stream Restoration	AC-AC-0285	Wakefield Park	Water Quality	County - FCPA	1 - 10
AC9304	Area-Wide Drainage Improvements	AC-AC-0290	Ravensworth Park and Bristow neighborhoods	Water Quality	Private	1 - 10
AC9311	Area-Wide Drainage Improvements	AC-CO-0020	Ramblewood neighborhood	Water Quality	Private	1 - 10
AC9535	BMP/LID	AC-TR-0005	Wakefield Chapel Estates	Water Quality	Private - Residential	1 - 10
AC9538	BMP/LID	AC-AC-0310	Northern Virginia Community College parking lot	Water Quality	State	1 - 10

Structural Projects						
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**	**Phase**
AC9539	BMP/LID	AC-AC-0315	Annandale Terrace Elementary School	Water Quality	County - FCPS	1 - 10
AC9541	BMP/LID	AC-AC-0315	Little River Shopping Center	Water Quality	Private - Commercial	1 - 10
AC9159	New Stormwater Pond	AC-AC-0280	Howery Field Park	Water Quality and Quantity	County - FCPA	11 - 25
AC9160	Stormwater Pond Retrofit	AC-TR-0000	Chapel Lake	Water Quality and Quantity	Private - Residential	11 - 25
AC9165	Stormwater Pond Retrofit	AC-AC-0320	Camelot Greens	Water Quality and Quantity	Private - Residential	11 - 25
AC9166	Stormwater Pond Retrofit	AC-AC-0315	Lafayette Forest	Water Quality	Private - Residential	11 - 25
AC9167	Stormwater Pond Retrofit	AC-AC-0315	Lafayette Park West	Water Quality and Quantity	Private - Residential	11 - 25
AC9168	Stormwater Pond Retrofit	AC-CO-0000	Adams Walk	Water Quality	Private - Residential	11 - 25
AC9169	Stormwater Pond Retrofit	AC-CO-0005	Wachovia Building on Woodland Rd	Water Quality	Private - Commercial	11 - 25
AC9170	Stormwater Pond Retrofit	AC-CO-0015	Lafayette Village	Water Quality	Private - Residential	11 - 25
AC9407	Culvert Retrofit	AC-TR-0000	Between Private Ln and Queen Elizabeth Blvd	Water Quality	State - VDOT	11 - 25
AC9534	BMP/LID	AC-TR-0000	Annandale District Govt Center	Water Quality	County	11 - 25
AC9536	BMP/LID	AC-TR-0010	Wakefield Forest Elementary School	Water Quality	County - FCPS	11 - 25
AC9537	BMP/LID	AC-AC-0310	Wakefield Park	Water Quality	County - FCPA	11 - 25
AC9700	Outfall Improvement	AC-AC-0310	Wakefield Park	Water Quality	County - FCPA	11 - 25
AC9701	Outfall Improvement	AC-AC-0310	Wakefield Park	Water Quality	County - FCPA	11 - 25

Non-Structural Projects					
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**
AC9900	Community Outreach/Public Education	Multiple	Multiple	Water Quality	Multiple

Non-Structural Projects					
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**
AC9903	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple
AC9904	Rain Barrels	Multiple	Multiple	Water Quality and Quantity	Multiple
AC9906	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple
AC9908	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple
AC9909	Rain Barrels	Multiple	Multiple	Water Quality and Quantity	Multiple
AC9910	Street Sweeping Program	Multiple	Multiple	Water Quality	Multiple
AC9913	Dumpsite/Obstruction Removal	Multiple	Multiple	Water Quality	Multiple
AC9935	Community Outreach/Public Education	Multiple	Multiple	Water Quality and Quantity	Multiple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AC9900
AC9904
AC9304
Cameron Run
Pohick Creek
Sandy Run
Ryans Dam
Occoquan
Mill Branch
Buffer Restoration
Stream Restoration
BMP/LID
Culvert Retrofit
Dumpsite/Obstruction Removal
New Stormwater Pond
Outfall Improvement
Stormwater Pond Retrofit
Other
Community Outreach/ Public Education
Area-wide Drainage Improvements
Land Conservation Project
Flood Protection/ Mitigation
Inspection/Enforcement Enhancement Project
Rain Barrel Programs
Street Sweeping Program
Studies, Surveys and Assessments
Implementation timeframe denoted by project label color.
Red = 0-10 years Black = 11-25 years.
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0 0.125 0.25
Miles
Map 5.9
WMA: Mainstem 3
Proposed Projects
5-75

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5.10 Accotink Mainstem 4

The results of the subwatershed ranking analysis showed a significant number of subwatersheds in Mainstem 4 WMA to be in good condition primarily due to the influence of undeveloped parcels of Lake Accotink Park. In terms of overall ranking, Mainstem 4 had four highest priority subwatersheds in the watershed.

5.10.1 Structural Projects

5.10.1.1 10-Year Projects

Accotink Mainstem 4 Stream Restoration Projects -- Three stream restoration projects and two culvert retrofits have been proposed on the tributary draining Kings Park and continuing into Lake Accotink Park. These projects should be constructed starting at the upstream end with AC9207 in Kings Park, followed by AC9206 downstream. Culvert retrofit AC9408 may provide some attenuation in flows which should be accounted for before designing stream restoration project AC9205. The final project in the series is culvert retrofit AC9402.

AC9205 Stream Restoration

This is a potential stream restoration site behind Thames Street in Lake Accotink Park in the Kings Park subdivision. Field investigation indicated moderate stream bank erosion and parts of the stream was widened to over 100 feet in many areas. The recommendation is to reconnect the channel to the floodplain by reducing channel dimensions and raising the bed elevation.

AC9206 Stream Restoration

This is a potential stream restoration site in the Kings Park subdivision between Thames Street, Victoria Street and Perth Court. Field investigations found the stream with moderate incision and stream bank erosion and over-widened stream conditions. An existing sanitary sewer crossing encased in concrete as well as an exposed sewer manhole standpipe are present in the stream channel. Recommendations include reconnecting this channel to the floodplain, possible channel relocation to redirect flows away from existing infrastructure, regrading and stabilization.

AC9207 Stream Restoration

This project is located entirely within Kings Park and extends from the end of Trafalgar Court to a culvert under Cromwell Drive. The current sinuous, incised, and over-widened stream channel is eroding on the outside of meander bends as well as along straight segments of the steam. Recommendations include creating a nested channel, reducing the existing channel dimensions and installing grade controls as well as armor-in-place stabilization techniques or stone toe protection.

AC9229 Stream Restoration

This project is intended to restore an eroded section of Flag Run located between the north side of the Capital beltway (I-495) and the south side of Queensberry Avenue. Currently, this channel is experiencing severe bank and bed erosion. The project would include regrading and stabilizing the eroded stream banks, protecting the outfall and potentially replacing the existing culvert with a bottomless arch culvert.

AC9302 Area-Wide Drainage Improvements

Area-wide drainage improvements are recommended to treat the runoff from the large medium-density residential area in the Ravensworth neighborhood by installing tree box filters at various inlets throughout the neighborhood.

AC9303 Area-Wide Drainage Improvements

Area-wide drainage improvements are recommended to treat the runoff from the untreated medium-density residential area in the Kings Park subdivision by installing tree box filters at inlets, disconnecting downspouts and installing rain gardens.

AC9400 Culvert Retrofit

This project, located at the road culvert under Queensbury Avenue in Lake Accotink Park, would modify the control structure to manage the high frequency storm events, reduce stream channel erosion and improve water quality. The project is located downstream of stream restoration project AC9229 and culvert retrofit AC9401. Design of all three projects should be performed concurrently.

AC9401 Culvert Retrofit

A culvert retrofit is proposed under the Capital Beltway in North Springfield. This project would add a control structure on the upstream side of the road culvert to control small, high frequency storms, primarily for water quality control. The project is located in the middle of two segments of stream restoration project AC9229 and upstream of culvert retrofit AC9400. Design of all three projects should be performed concurrently.

5.10.1.2 25-Year Projects

AC9142 New Stormwater Pond

This site is located at an industrial area on Morrissette Drive. Proposed recommendations include adding a new wetland to provide storage and a forebay at the outfall to provide water quantity and quality control. The project may be constrained by an electric line overhead.

AC9402 Culvert Retrofit

This project proposes to retrofit the upstream side of the road culvert under Danbury Forest Drive in Lake Accotink Park. This would add a control structure on the upstream side of the culvert to regulate discharge of the small, high frequency storms.

AC9403 Culvert Retrofit

This is a potential retrofit of a road culvert under Southampton Drive in the Kings Park neighborhood. Recommendations include adding a control structure on the upstream side of the road culvert to control the storm surge from rain events.

AC9523 New BMP/LID

Several bioretention facility options are proposed at the North Springfield Elementary School. Recommendations include adding a bioretention facility at the end of the main parking area, bioretention or rain gardens at the downspouts, disconnecting downspouts and adding stormwater planters on the side near the secondary parking area.

AC9524 New BMP/LID

This project is located at the Church of Jesus Christ on Inver Chapel Road. Proposed project recommendations include disconnecting downspouts, directing the runoff to rain gardens at the back of the church and treating the parking lot runoff by implementing bioretention at both ends of the parking lot. There is also potential to disconnect downspouts on apartment buildings on Rexford Court and route the flow toward a new bioretention in an open grassy area.

AC9525 New BMP/LID

A series of bioretention filters are proposed at yard inlets draining Tivoli Condominiums behind Torington Drive to treat the impervious runoff. Recommendations include modifying the existing storm drain structure to allow minimal ponding and adding plantings around the structures for uptake.

AC9526 BMP/LID Retrofit

This project recommends a bioretention facility at the rear of the West Springfield Business Center parking lot at the industrial area on Morrissette Drive. The proposed bioretention would treat the runoff from the parking lot used for fleet storage and the fueling area.

AC9527 New BMP/LID

This is a potential parking lot retrofit at Kings Park Elementary School. Three bioretention facilities are proposed at yard inlets on the site to capture and treat stormwater runoff.

5.10.2 Non Structural Projects

AC9903 Inspection/Enforcement Enhancement Project - Outdoor Materials

Materials that are stored outdoors are subjected to precipitation, making them a possible source of stormwater runoff pollution. Three sites in this WMA had an uncovered fueling area, large dirt mounds without cover, or building materials stored outside. This project would be a community-wide enforcement and outreach approach to check for stormwater pollution prevention plans and to educate property owners.

AC9909 Rain Barrel Programs - Downspout Disconnect

The upland reconnaissance identified several sites where downspouts were directly connected to storm drains. A watershed-wide outreach program could be beneficial in reducing runoff volume or peak flows. In this WMA, it includes the areas around Ravensworth, Springfield and Kings Park.

AC9913 Dumpsite/Obstruction Removal - Dumpsite/Obstruction

Four sites were identified with significant obstructions or dumpsites during the stream assessment. This project would be a community-wide program to remove trees and concrete within the stream blocking fish passage.

Table 5-10: Mainstem 4 Projects

Structural Projects						
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**	**Phase**
AC9205	Stream Restoration	AC-AC-0270	Lake Accotink Park	Water Quality	County - FCPA	1 - 10
AC9206	Stream Restoration	AC-AC-0270	Kings Park neighborhood	Water Quality	Private - Residential	1 - 10
AC9207	Stream Restoration	AC-AC-0275	Kings Park	Water Quality	County - FCPA	1 - 10
AC9229	Stream Restoration	AC-FR-0000, -0005	Flag Run Park, Lake Accotink Park / I-495	Water Quality	County - FCPA / State - VDOT	1 - 10
AC9302	Area-Wide Drainage Improvements	AC-AC-0240	Ravensworth neighborhood	Water Quality	Private - Residential	1 - 10
AC9303	Area-Wide Drainage Improvements	AC-AC-0260	Kings Park neighborhood	Water Quality	Private	1 - 10
AC9400	Culvert Retrofit	AC-FR-0000	Queensberry Ave	Water Quality	State - VDOT	1 - 10
AC9401	Culvert Retrofit	AC-FR-0005	I-495	Water Quality	State - VDOT	1 - 10
AC9142	New Stormwater Pond	AC-AC-0260	Behind Morrissette Dr	Water Quality and Quantity	Private - Utility	11 - 25
AC9402	Culvert Retrofit	AC-AC-0270	Lake Accotink Park	Water Quality and Quantity	State - VDOT	11 - 25
AC9403	Culvert Retrofit	AC-AC-0270	Lake Accotink Park	Water Quality	State - VDOT	11 - 25
AC9523	BMP/LID	AC-FR-0005	North Springfield Elementary School	Water Quality	County - FCPS	11 - 25
AC9524	BMP/LID	AC-AC-0235	Church of Jesus Christ and behind Rexford Ct	Water Quality	Private	11 - 25
AC9525	BMP/LID	AC-AC-0248	Tivoli Condominiums	Water Quality	Private	11 - 25
AC9526	BMP/LID	AC-AC-0260	West Springfield Business Center	Water Quality	Private - Commercial	11 - 25
AC9527	BMP/LID	AC-AC-0270	Kings Park Elementary School	Water Quality	County - FCPS	11 - 25
AC9703	Outfall Improvement	AC-AC-0270	Lake Accotink Park	Water Quality	County - FCPA	11 - 25

Non-Structural Projects					
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**
AC9903	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple
AC9909	Rain Barrels	Multiple	Multiple	Water Quality and Quantity	Multiple

Non-Structural Projects					
Project #	**Project Type**	**Subshed**	**Location**	**Watershed Benefit**	**Land Owner**
AC9913	Dumpsite/Obstruction Removal	Multiple	Multiple	Water Quality	Multiple

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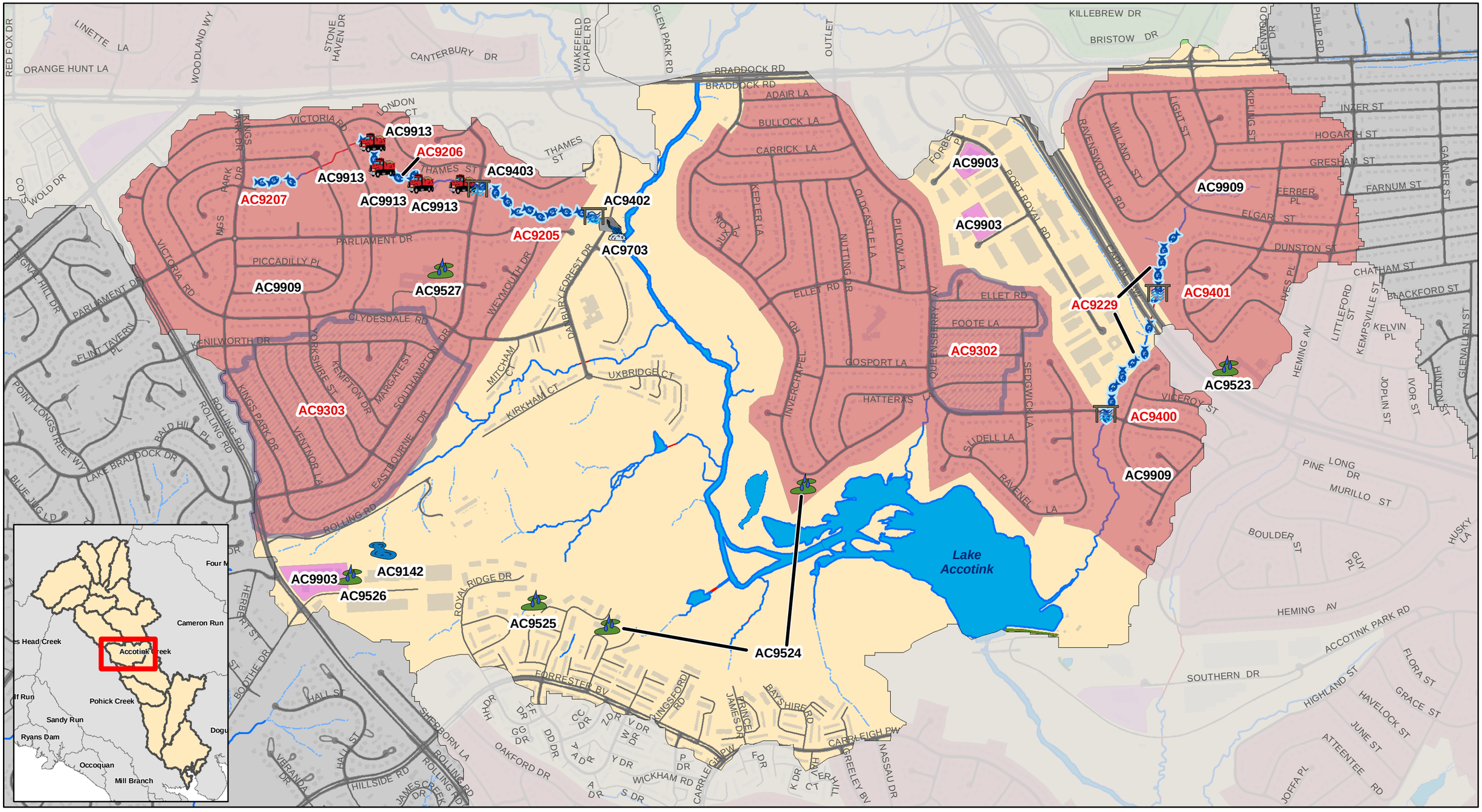

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0 0.125 0.25
Miles

- Buffer Restoration
- Stream Restoration
- BMP/LID
- Culvert Retrofit
- Dumpsite/Obstruction Removal
- New Stormwater Pond
- Outfall Improvement
- Stormwater Pond Retrofit
- Other
- Community Outreach/Public Education
- Area-wide Drainage Improvements
- Land Conservation Project
- Flood Protection/Mitigation
- Inspection/Enforcement Enhancement Project
- Rain Barrel Programs
- Street Sweeping Program
- Studies, Surveys and Assessments

Implementation timeframe denoted by project label color. Red = 0-10 years Black = 11-25 years.

Map 5.10

WMA: Mainstem 4
Proposed Projects

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